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KOVAIPUDUR, COIMBATORE 641042

INTERACTIVE CHILDREN'S STORYBOOK AND EDUCATION

A PROJECT REPORT

Submitted by

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In partial fulfilment for the award of the degree of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE AND ENGINEERING

AUGUST 2024

BONAFIDE CERTIFICATE

Certified that this project report **INTERACTIVE CHILDREN'S STORYBOOK AND EDUCATION** is the bonafide work of **DHARSHINI N 727822TUCS032, DEVADHARSHINI S 727822TUCS029, KANISHKA M 727822TUCS054, ANDREY FLINTOFF G** who carried out the project work under my supervision.

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INTERNAL EXAMINER **EXTERNAL EXAMINER**

ACKNOWLEDGEMENT

First and foremost we thank the **Almighty** for being our light and for showering his gracious blessings throughout the course of this project.

We express our gratitude to our beloved Principal, **Dr. M.G. Sumithra,** for providing all facilities.

We are grateful to our beloved Head, Computing Sciences **Dr. T. Senthilnathan,** for his tireless and relentless support.

With the grateful heart, our sincere thanks to our Head of the Department **Dr. M. Udhayamoorthi**, Department of Computer Science and Engineering for the motivation and all support to complete the project work.

We thank **Dr. R. Gnanakumari**, Assistant Professor, Department of Computer Science and Engineering, for his motivation and support.

We are thankful to all the **Teaching and Non-Teaching Staff** of Department of Computer Science and Engineering and to all those who have directly and indirectly extended their help to us in completing this project work successfully.

We extend our sincere thanks to our **family members** and our beloved **friends**, who had been strongly supporting us in all our Endeavour.

ABSTRACT

The Real Estate Management System developed for a college environment harnesses the cutting-edge technologies of React, Spring Boot, and MongoDB to create a comprehensive platform that revolutionizes real estate management. Through a robust authentication system and role-based access controls, buyers and sellers can effortlessly register , access detailed properties , and receive prompt notifications for crucial updates. Administrators are empowered with a feature-rich dashboard, enabling seamless property creation, modification, and deletion, along with insightful reporting capabilities to track buyers registrations and analyze trends. The user dashboard offers a user-centric interface for intuitive registration and details, while the property creation module provides administrators with granular control over parameters such as property name, location, id, and rate. The system's calendar view offers a convenient overview of upcoming property, facilitating effective planning for users. Integrated email notifications ensure users stay informed of registration confirmations, updates, and reminders, while real-time push notifications deliver instant updates directly on the web interface. Leveraging React's dynamic frontend, Spring Boot's robust RESTful APIs, and MongoDB's scalable database architecture, the system not only enhances efficiency by automating and streamlining processes but also significantly improves transparency and communication within the user ecosystem. Its scalability ensures seamless growth to accommodate expanding user and user data, while the advanced reporting tools provide actionable insights for strategic planning and resource allocation. In conclusion, the Real Estate Management System stands as a state-of-the-art solution, tailored to meet the diverse needs of both buyers and administrators, promising a seamless, efficient, and property registration and management experience within the real estate domain.

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LIST OF ABBREVIATIONS

Abbreviation	Acronym
HTML	HYPERTEXT MARKUP LANGUAGE
CSS	CASCADING STYLESHEET
JS	JAVASCRIPT
SDLC	SOFTWARE DEVELOPMENT LIFE CYCLE
MY SQL	MY STRUCTURED QUERY LANGUAGE

CHAPTER 1

INTRODUCTION

This project aims to deliver an engaging educational experience for children through an interactive storybook platform. It combines dynamic storytelling with educational quizzes and embedded YouTube videos. Built with a React frontend for a responsive user experience, a Spring Boot backend for efficient content management, and MySQL for robust data handling, the platform offers a seamless and interactive learning environment that enhances children's education and makes learning enjoyable.

1.1 PROBLEM STATEMENT

How can we create an interactive children's storybook platform that integrates dynamic storytelling with educational quizzes and multimedia elements, providing an engaging and educational experience while ensuring user-friendly navigation and content management?

1.2 OVERVIEW

In the realm of children's education and interactive storytelling, users often encounter issues such as fragmented content, lack of engaging educational activities, and limited interactive features. This platform will combine captivating stories with educational quizzes, multimedia elements, and read-aloud functionalities, ensuring an engaging, educational, and immersive experience for children while providing intuitive navigation and rich content management.

1.3 OBJECTIVE

The primary objective of this project is to create an interactive children's storybook and educational platform that provides an engaging and educational experience. By integrating interactive stories with features like read-aloud options, quizzes the platform aims to enhance learning and make storytelling captivating for children. It seeks to offer a seamless user experience with dynamic content management, ensuring both educational value and entertainment while fostering an immersive learning environment.

CHAPTER 2
SYSTEM SPECIFICATION

In this chapter, we are going to see the software that we have used to build the website. This chapter gives you a small description about the software used in the project.

2.1 VS CODE

Visual Studio Code is a source code editor developed by Microsoft for Windows, Linux, and macOS. It includes support for debugging, embedded Git control, syntax highlighting, intelligent code completion, snippets, and code refactoring. It is also customizable, so users can change the editor's theme, keyboard shortcuts, and preferences.

VS Code is an excellent code editor for React projects. It is lightweight, customizable, and has a wide range of features that make it ideal for React development. It has built-in support for JavaScript, JSX, and TypeScript, and enables developers to quickly move between files and view detailed type definitions. It also has a built-in terminal for running tasks. Additionally, VS Code has an extensive library of extensions that allow developers to quickly add features like code snippets, debugging tools, and linting supportto their projects.

2.2 LOCAL STORAGE

Local storage is a type of web storage for storing data on the client side of a web browser. It allows websites to store data on a user's computer, which can then be accessed by the website again when the user returns. Local storage is a more secure alternative to cookies because it allows websites to store data without having to send it back and forth with each request. Local storage is a key-value pair storage mechanism, meaning it stores data in the form of a key and corresponding value. It is similar to a database table in that it stores data in columns and rows, except that local storage stores the data in the browser rather than in a database. Local storage is often used to store user information such as

preferences and settings, or to store data that is not meant to be shared with other websites. It is also used to cache data to improve the performance of a website. Local storage is supported by all modern web browsers, including Chrome,

Firefox, Safari, and Edge. It is accessible through the browser's JavaScript API. Local storage is a powerful tool for websites to store data on the client side. It is secure, efficient, and can be used to store data that does not need to be shared with other websites.

Local Storage is a great way to improve the performance of a website by caching data. Local storage in web browsers allows website data to be stored locally on the user's computer. It is a way of persistently storing data on the client side, which is not sent to the server with each request. This allows users to store data such as preferences, login information, and form data without needing to send it to a server. It is typically stored in a browser's cookie file, but it can also be stored in other locations such as HTML5 Local Storage and Indexed DB. The data stored in local storage is persistent and can be accessed by the website even if the user closes the browser or navigates to another page. It is a great way for websites to store user-specific data, as it is secure, reliable, and fast. It is also a great way for developers to store data that does not need to be sent to the server with each request.

One of the key benefits of using local storage is its reliability. Unlike server-side storage, which can be affected by network outages or other server issues, local storage is stored locally on the user's machine, and so is not affected by these issues. Another advantage of local storage is its speed. Because the data is stored locally, it is accessed quickly, as there is no need to send requests to a server. This makes it ideal for storing data that needs to be accessed quickly, such as user preferences or session data. Local storage is also secure, as the data is stored on the user's machine and not on a server. This means that the data is not accessible by anyone other than the user, making it a good choice for storing sensitive information.

CHAPTER 3

PROPOSED SYSTEM

This chapter gives a small description about the proposed idea behind the development of our website

3.1 PROPOSED SYSTEM

The interactive children's storybook and educational platform is designed to provide an engaging and educational experience for young learners. This system offers a dynamic frontend built with React, enabling interactive storytelling with features like read-aloud options, quizzes, and multimedia content. Children can explore a diverse collection of stories, listen to narrated versions, and participate in interactive quizzes to reinforce their learning.

The platform incorporates an easy-to-use shopping cart functionality, allowing users to purchase books directly. With this feature, users can browse through available books, add their selections to the cart, and complete the purchase through a secure online transaction process. This enhances the user experience by simplifying the process of acquiring educational materials.

From an administrative perspective, the system streamlines content management and user interactions. It automates content updates and ensures efficient management of the platform's features. By leveraging technology to support interactive learning and providing a seamless purchasing experience, the system significantly enhances educational engagement and accessibility for children.

Moreover, the system enhances operational efficiency by automating content management, user interactions, and purchase processes. This ensures that updates and transactions are handled swiftly and accurately, improving the overall user experience. By leveraging advanced technology, the platform delivers a seamless, user-friendly interface while optimizing administrative tasks, resulting in a more effective and enjoyable educational experience for children

3.2 ADVANTAGES

- Engagement: The system offers interactive storybooks and educational games that capture children's attention, making learning both enjoyable and effective. The engaging content fosters a love for reading and enhances knowledge retention by creating a fun learning environment

- Accessibility: With 24/7 access to a diverse range of educational materials and multimedia content, children and parents can engage with the platform from anywhere with internet access. This flexibility accommodates various learning schedules and eliminates geographical constraints, ensuring that quality educational resources are always available.

- Read-Aloud Feature: Stories come with a read-aloud option, allowing children to listen to narrations while following along with the text. This feature supports language development, improves comprehension, and helps young readers build their reading skills at their own pace.

- Interactive Quizzes: The inclusion of interactive quizzes adds an element of fun and assessment to the learning process. Quizzes reinforce the material covered in the storybooks and educational games, providing immediate feedback and helping children gauge their understanding of the content

CHAPTER 4

METHODOLOGIES

This chapter gives a small description about how our system works.

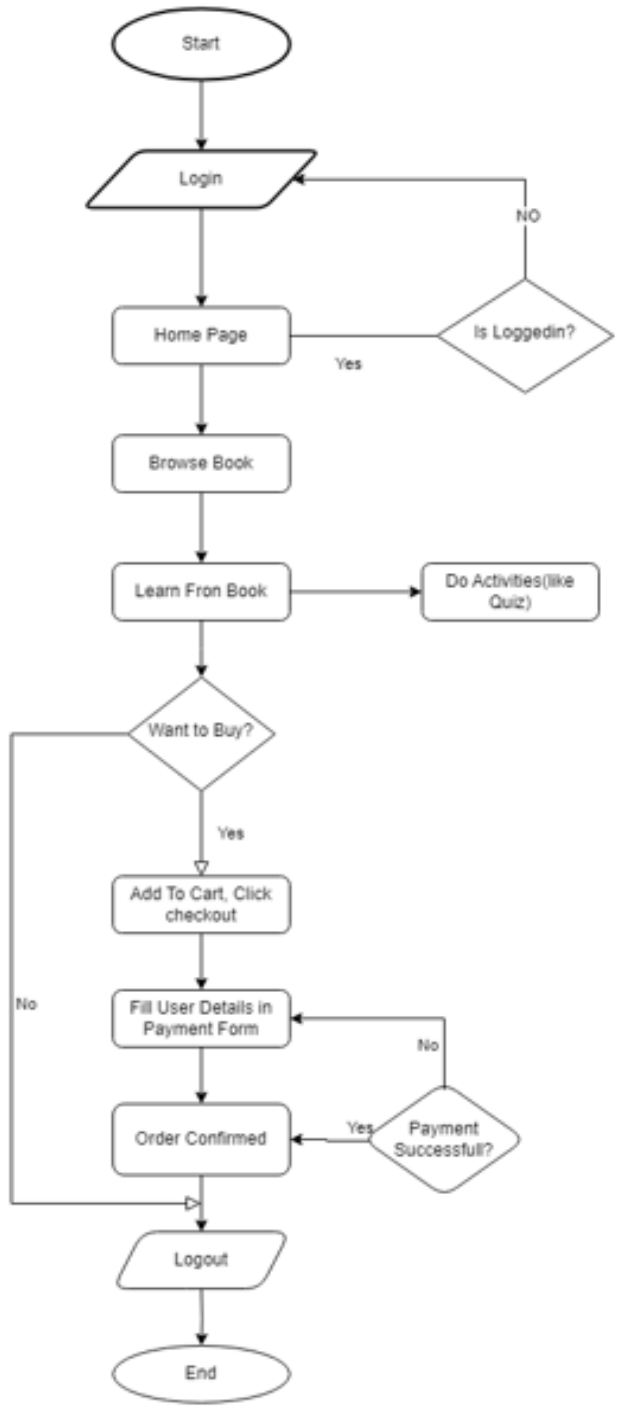


Fig 4.1.Process flow diagram

1. **Login:**

Users are required to log in to access the platform's features. If the user is not logged in, they will be prompted to log in or sign up.

The login page collects credentials such as username and password. If the credentials are valid, the user is granted access to the platform.

2. **Home Page:**

Once logged in, users are directed to the home page where they can see various options available, like browsing books or exploring other features.

The home page acts as a dashboard, showing options for browsing, learning, and engaging in activities.

3. **Learn From Books:**

After selecting a book, users can start learning from it.

This could involve reading the book, taking notes, or interacting with any digital content related to the book.

4. **Do Activities:**

Users have the option to engage in activities related to the book, such as quizzes or exercises.

These activities might be designed to test the user’s understanding or reinforce learning through interactive content.

5. **Add To Cart:**

If the user decides to purchase a book, they add it to their shopping cart and proceed to checkout.

The checkout process might involve reviewing the cart, applying any discounts, and confirming the purchase.

6. **Payment Process:**

The system checks whether the payment was successfully processed.

If the payment is successful, the order is confirmed. If not, the user may need to retry the payment process.

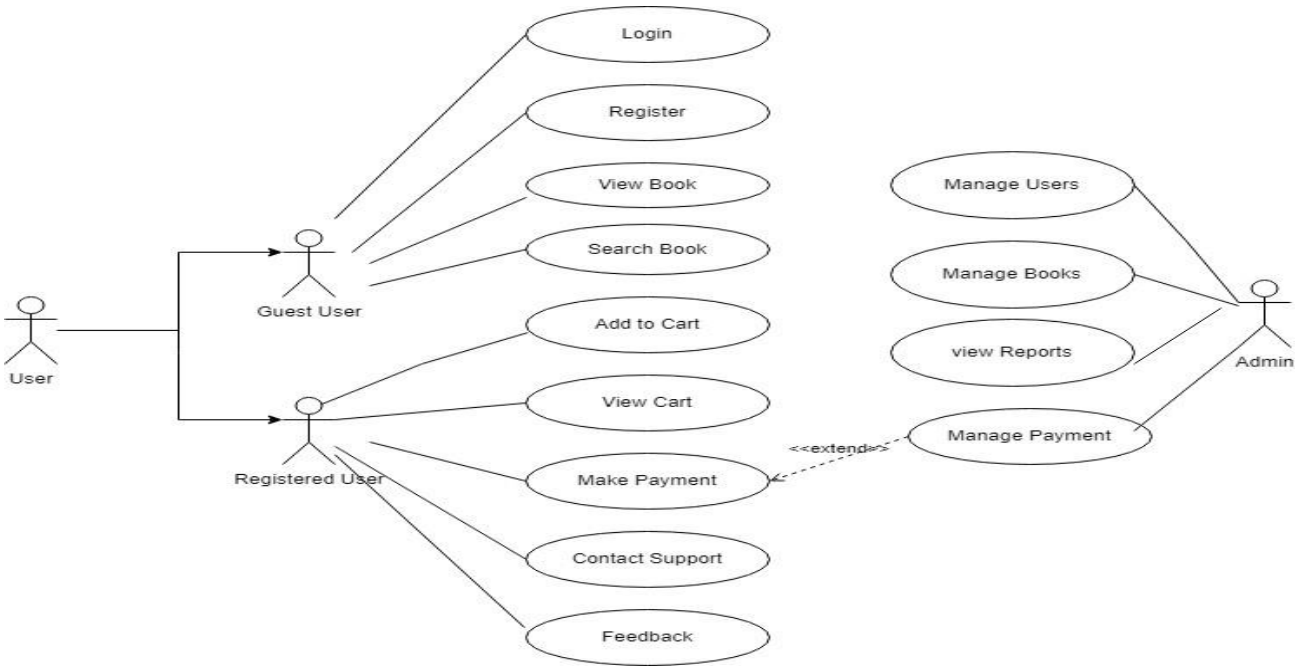
7. Order Review:

Once the payment is processed successfully, the order is confirmed and dispatched.

The user receives an order confirmation message, which may include an invoice or receipt, and details on how to access their purchased book.

Use Case Diagram:

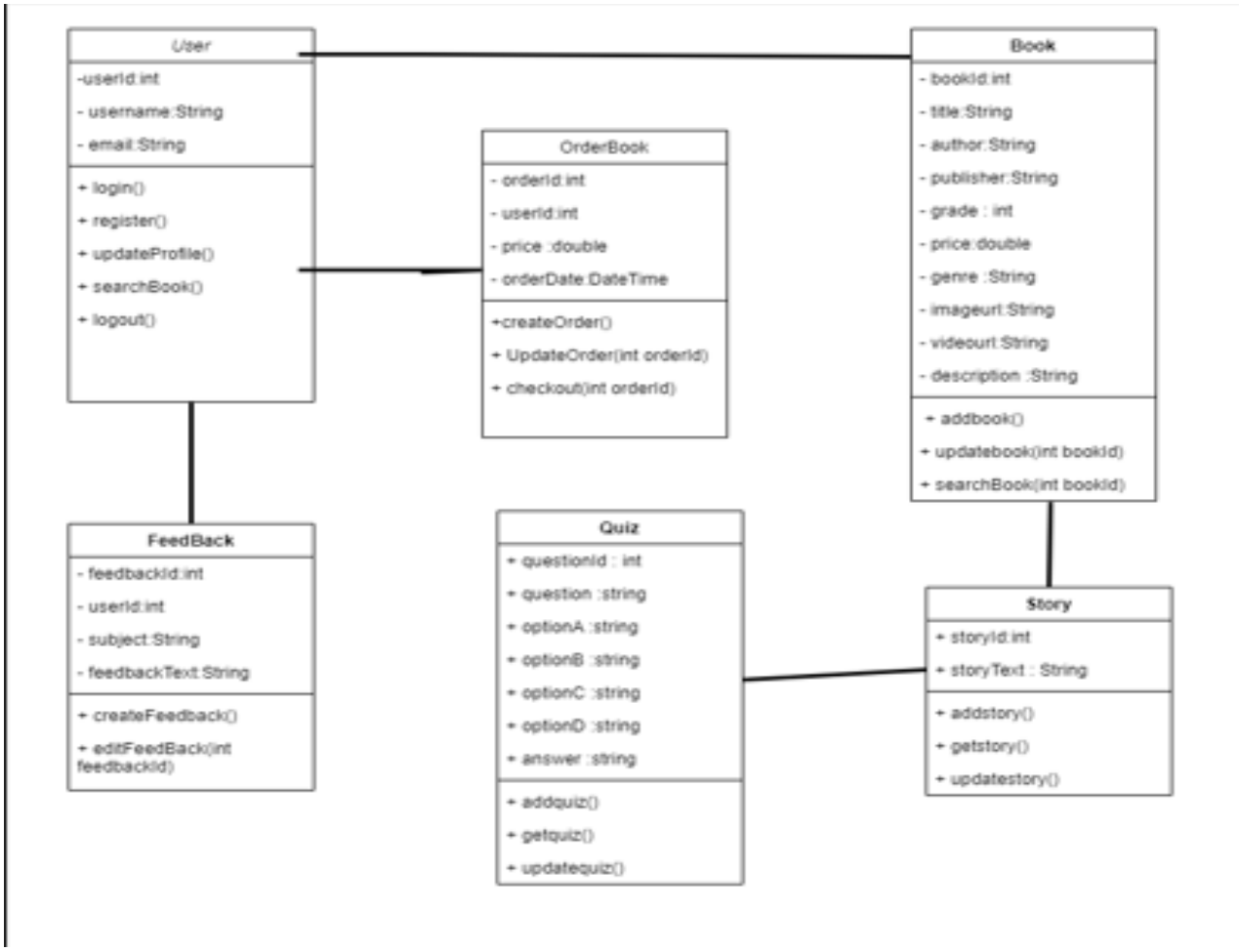
The Interactive Children Storybook and Education Platform enables young learners to engage with educational content in a fun and interactive way. Children can browse a wide selection of storybooks, participate in educational activities, and take quizzes that reinforce learning. The platform offers personalized learning experiences by adapting content to the child's progress and preferences. Parents can monitor their child's development and progress, while administrators manage content, track usage, and analyze educational outcomes, ensuring an enriching and tailored educational journey for each child.



4.2 Use Case Diagram

Class Diagram:

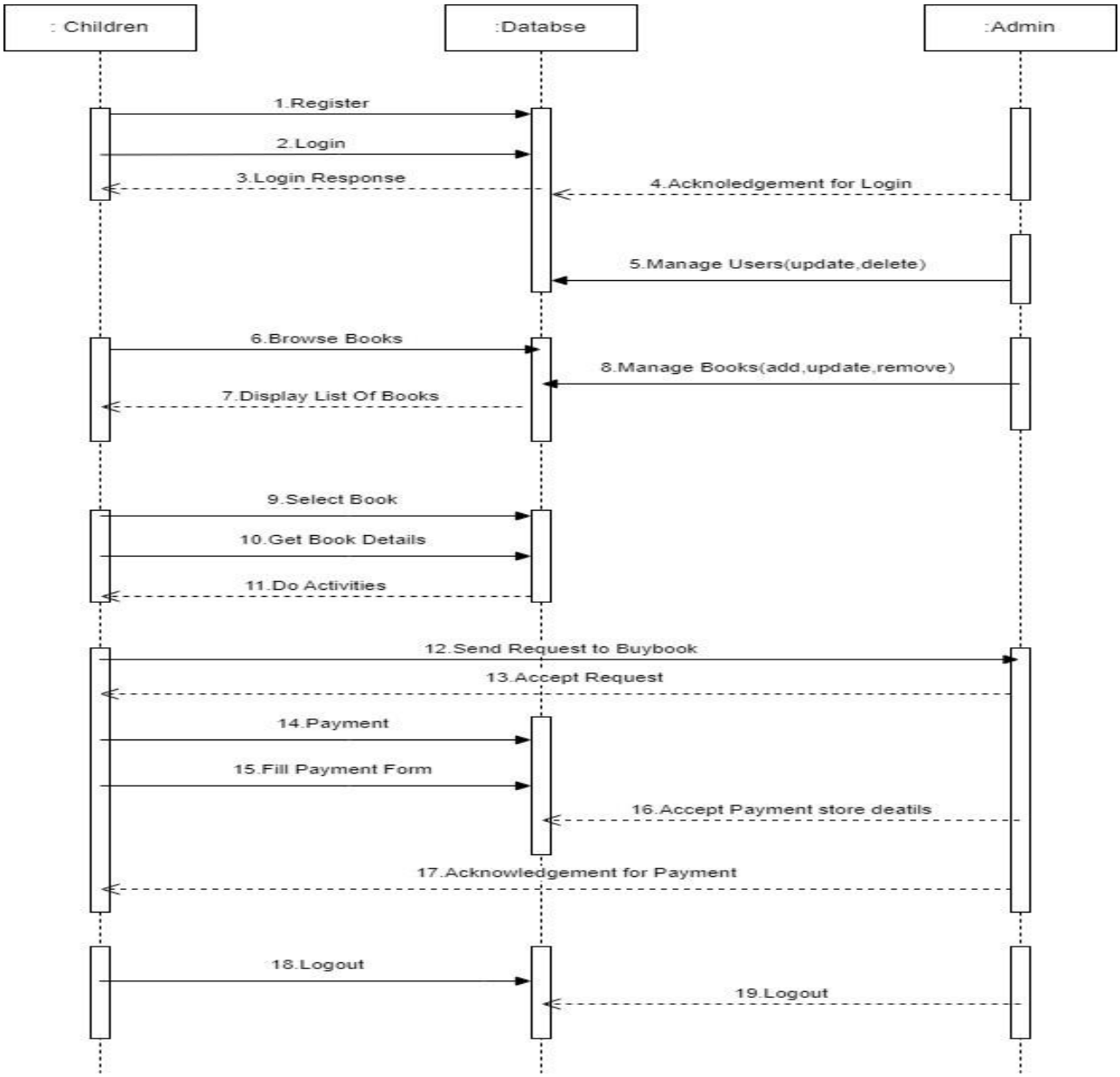
The Interactive Children Storybook and Education System is composed of classes such as User, Book, Story, Quiz, Feedback, and Order Book. Users can browse books, read stories, participate in quizzes, and provide feedback. The Book class manages information about the storybooks, while the Story class handles the content of the stories themselves. Quizzes are associated with books and are designed to reinforce learning. Users can order books through the Order Book class, which tracks orders and manages the checkout process. Feedback from users is managed through the Feedback class, allowing users to share their thoughts on the content. This diagram illustrates the core functionalities and relationships within the system, ensuring an engaging and educational experience for children.



4.3 Class Diagram

Sequence Diagram:

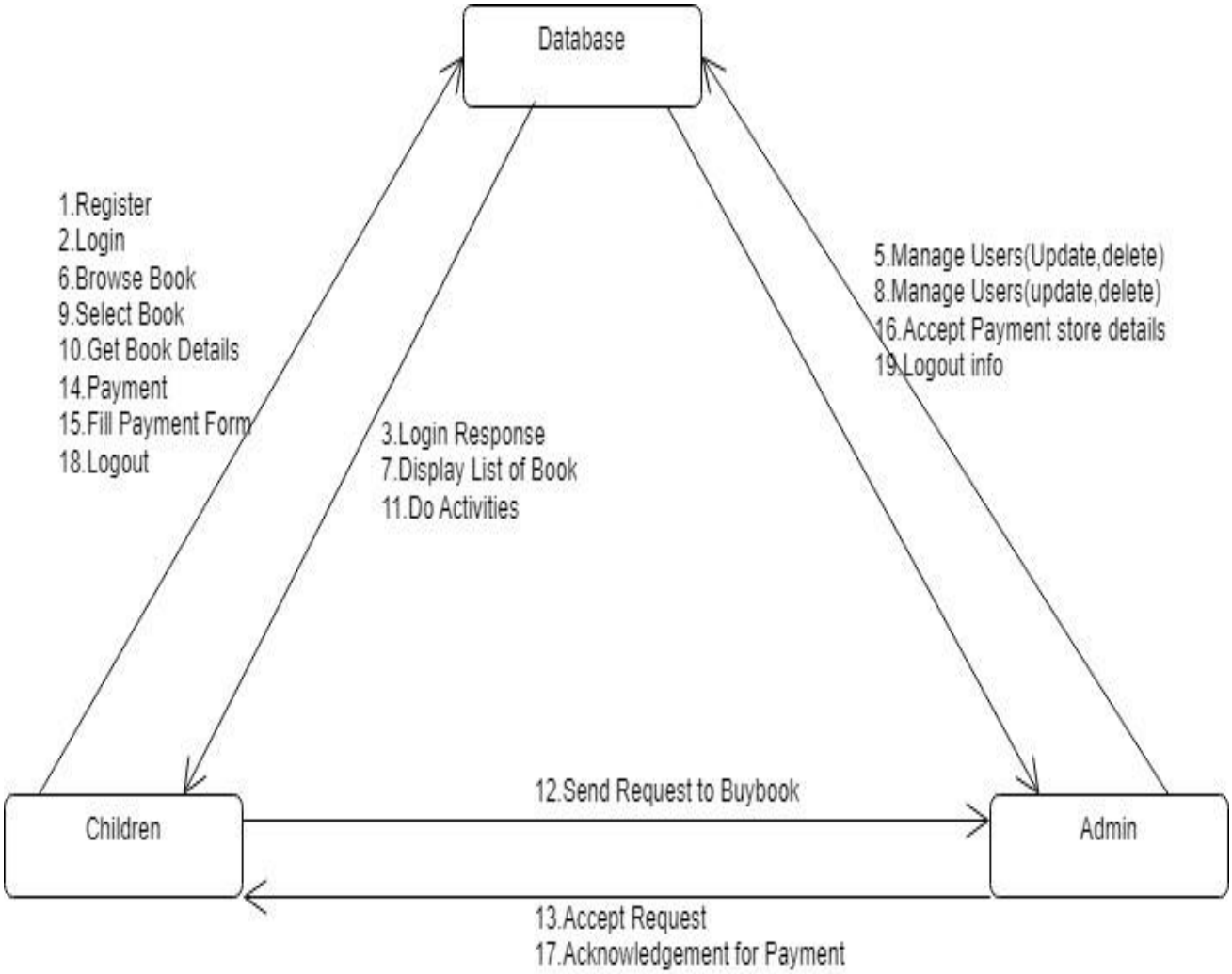
The sequence diagram for the Online Exam Registration System illustrates the process where Candidates initiate registration by providing personal details and selecting exams, followed by payment processing and admission ticket generation. Admins then verify registrations by reviewing details and updating statuses accordingly. This diagram succinctly outlines the interactions between Candidates, the system, and Admins during the exam registration process, from registration initiation to Admin verification.



4.4 Sequence Diagram

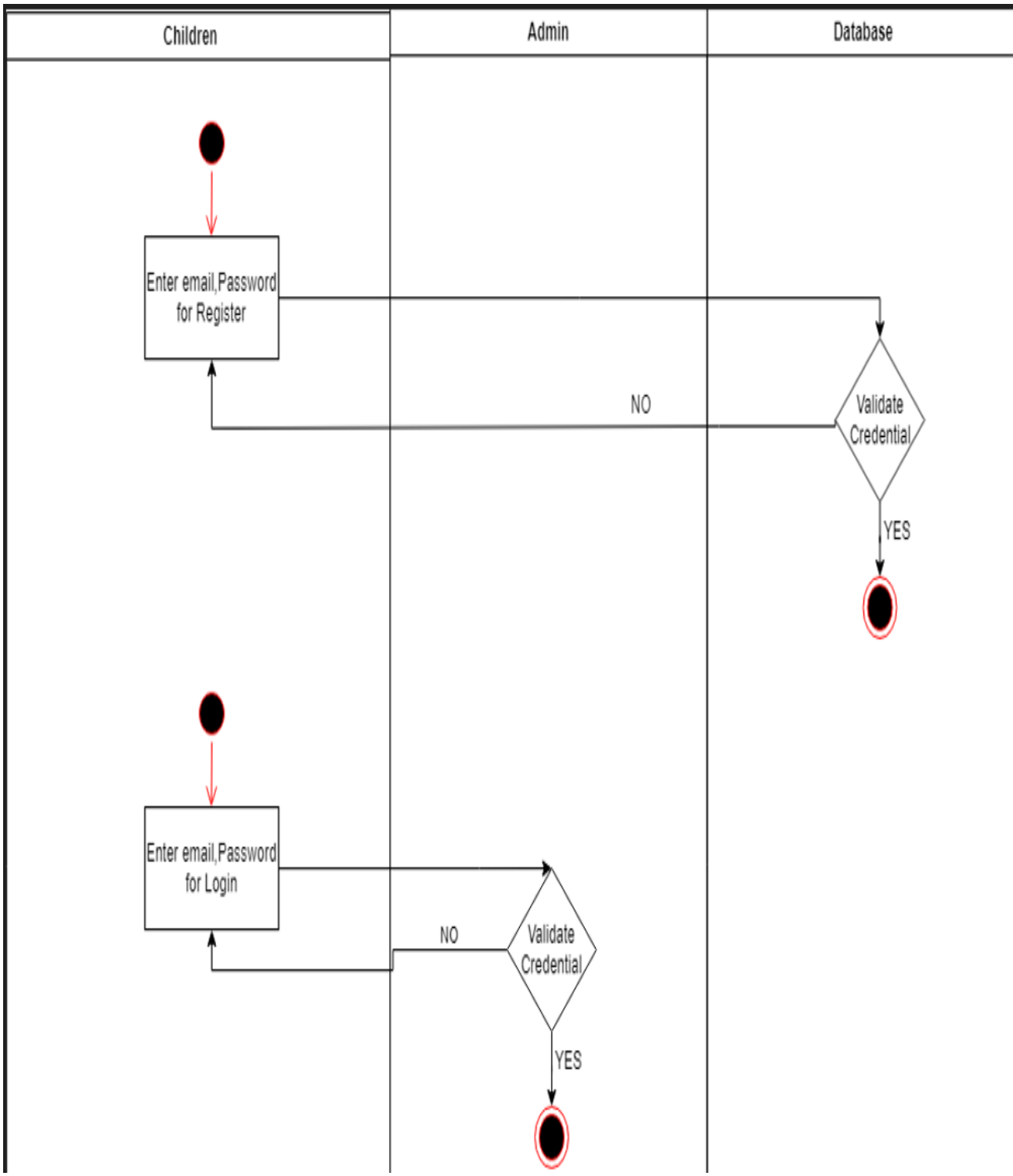
Collaboration Diagram:

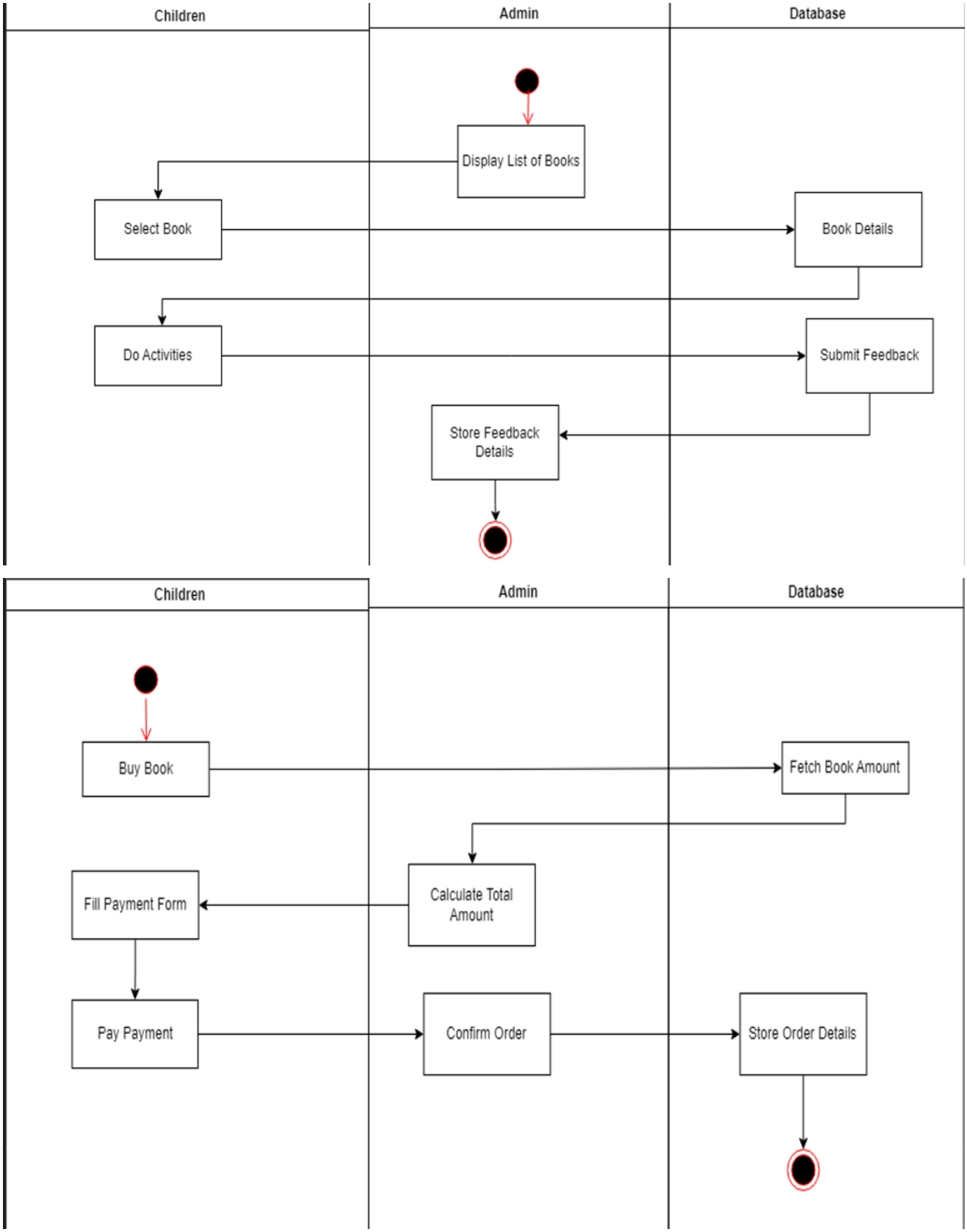
The collaboration diagram for the Online Exam Registration System illustrates the interactions where Candidates input their details and exam choices via the RegistrationForm object, which then communicates with the system for verification. Upon successful verification, the system collaborates with the PaymentGateway for payment processing, generates an AdmissionTicket object for the Candidate, and updates the Registration object. Admins interact with the AdminPanel object to review and approve/reject registrations, updating statuses accordingly in the system. This diagram succinctly captures the collaboration between objects in the exam registration process, from Candidate input to Admin verification and system updates.



4.5 Collaboration Diagram

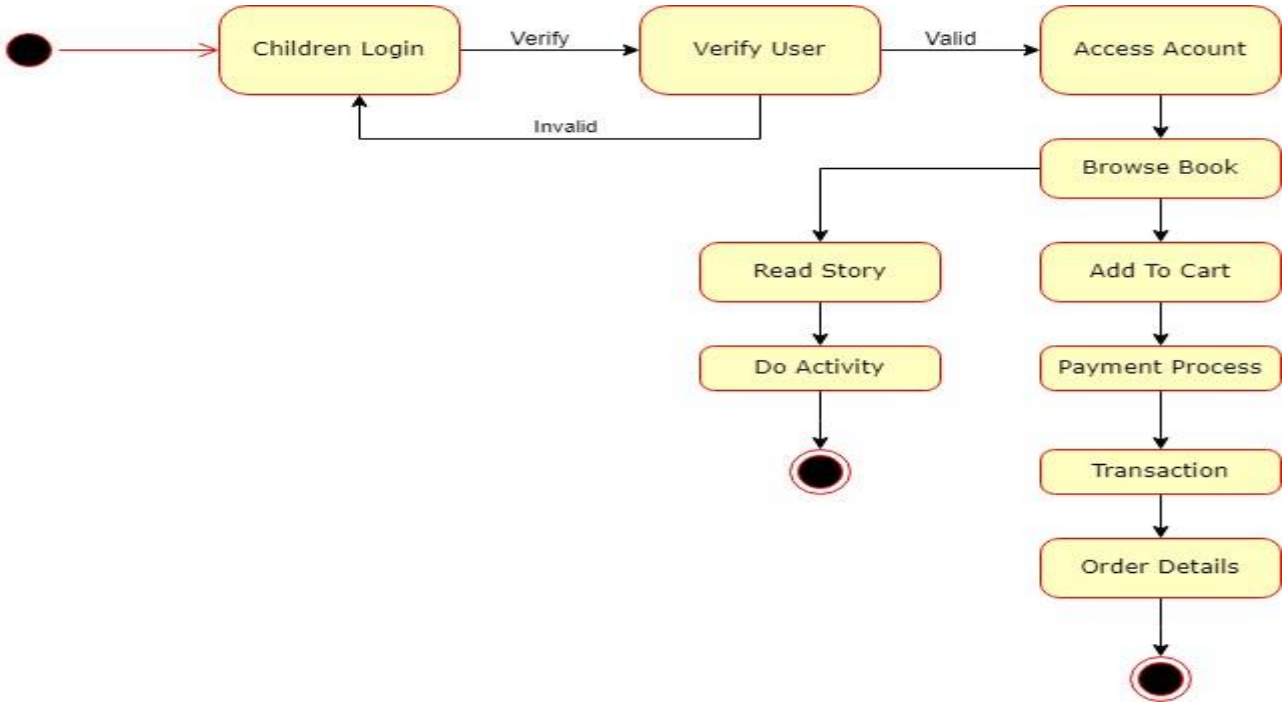
Activity Diagram:





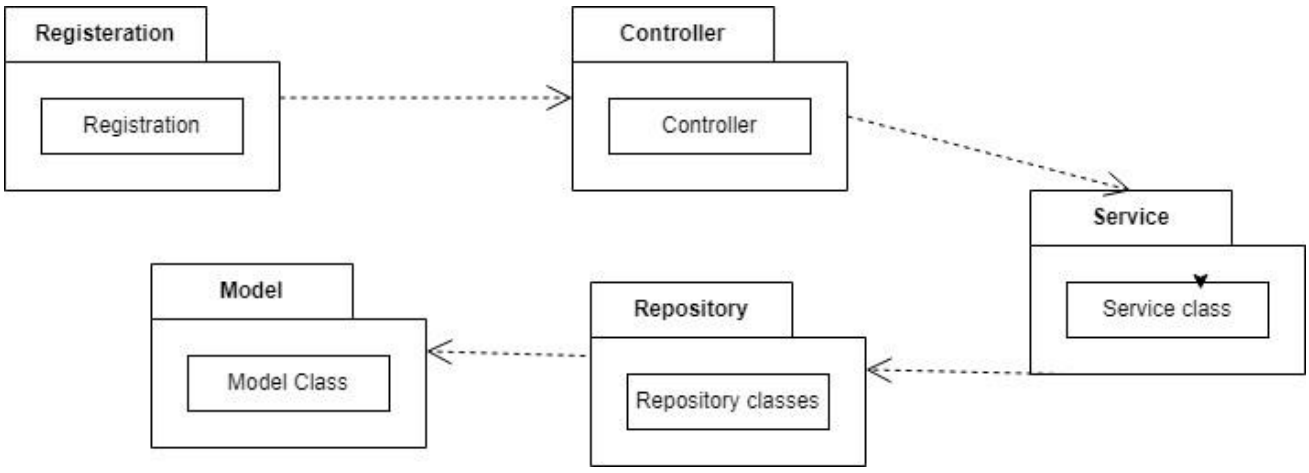
4.6 Activity Diagram

State Diagram:



4.7 State Diagram

Package Diagram:



4.8 Package Diagram

CHAPTER 5
IMPLEMENTATION AND RESULT

This chapter gives a description about the output that we produced by developing the website of our idea.

5.1 LOGIN

When User enters our website he will be asked about his login details like email id and password. The login details will be verified with the details given while the user creates an account.

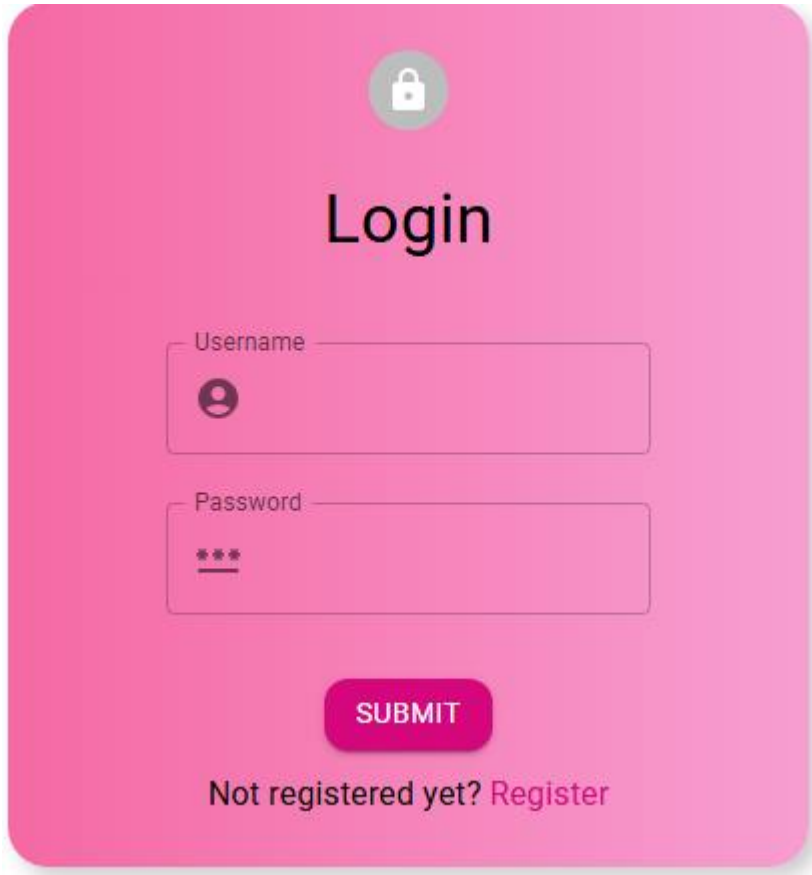


Fig 5.1 LOGIN PAGE

5.2 USER REGISTER

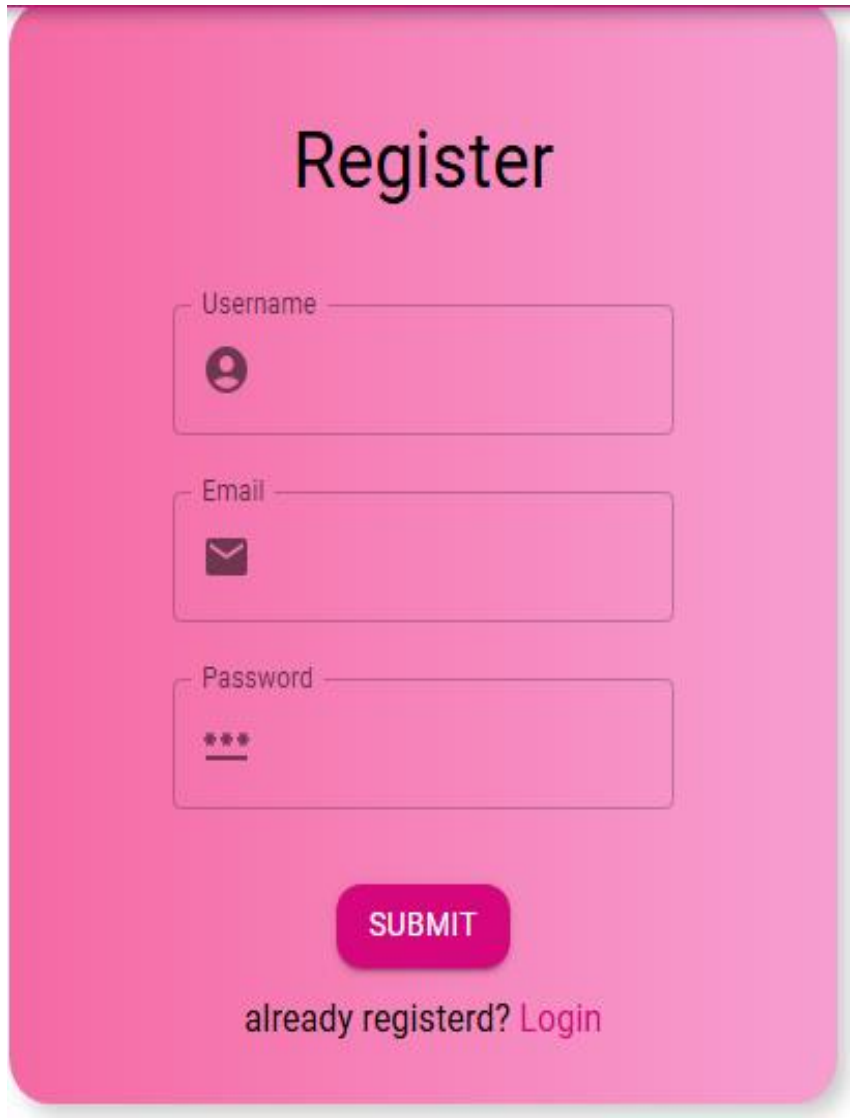


Fig 5.2 USER REGISTER

5.3 HOME PAGE

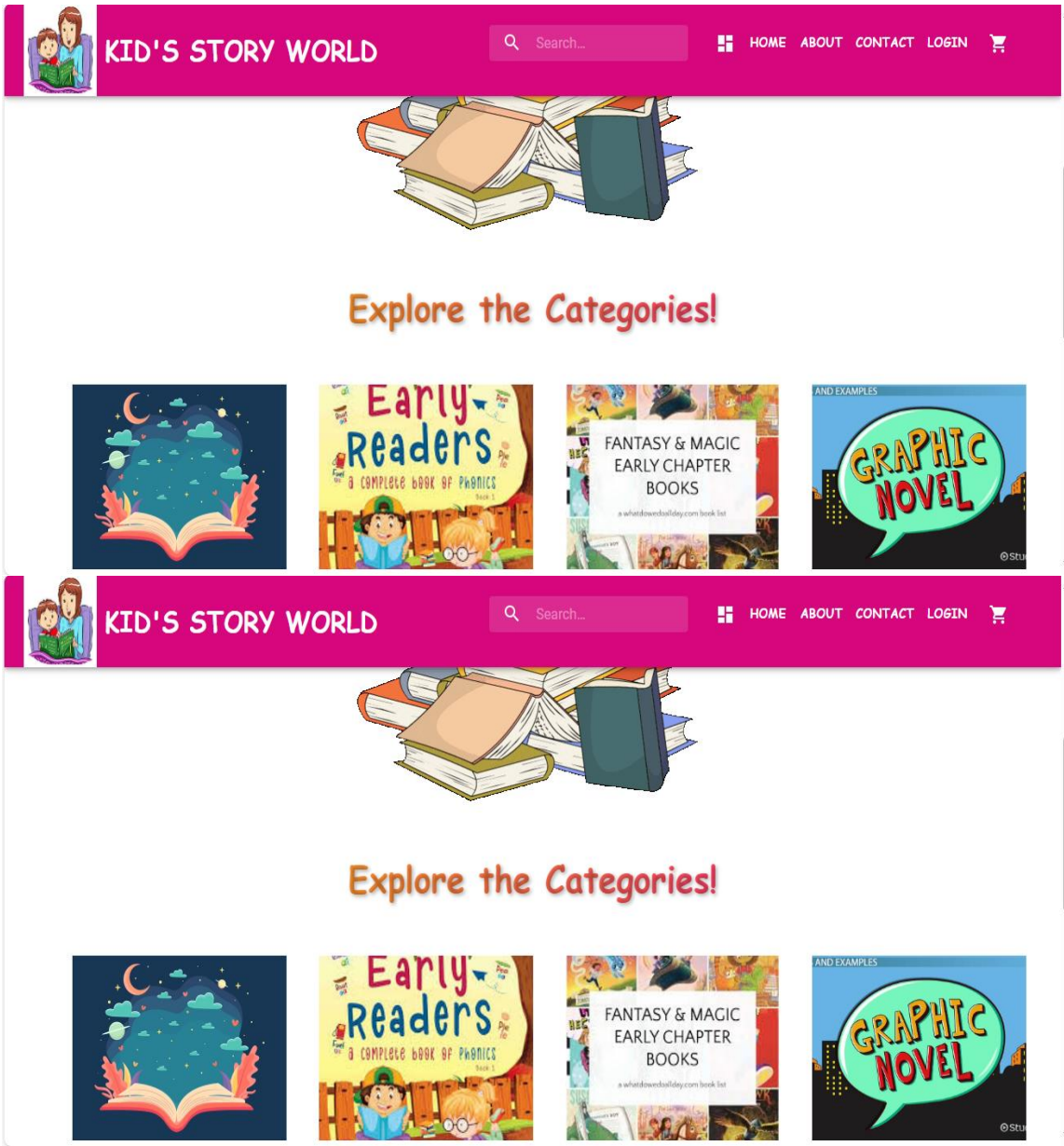


Fig 5.3 Exam Registration

5.4 DATABASE

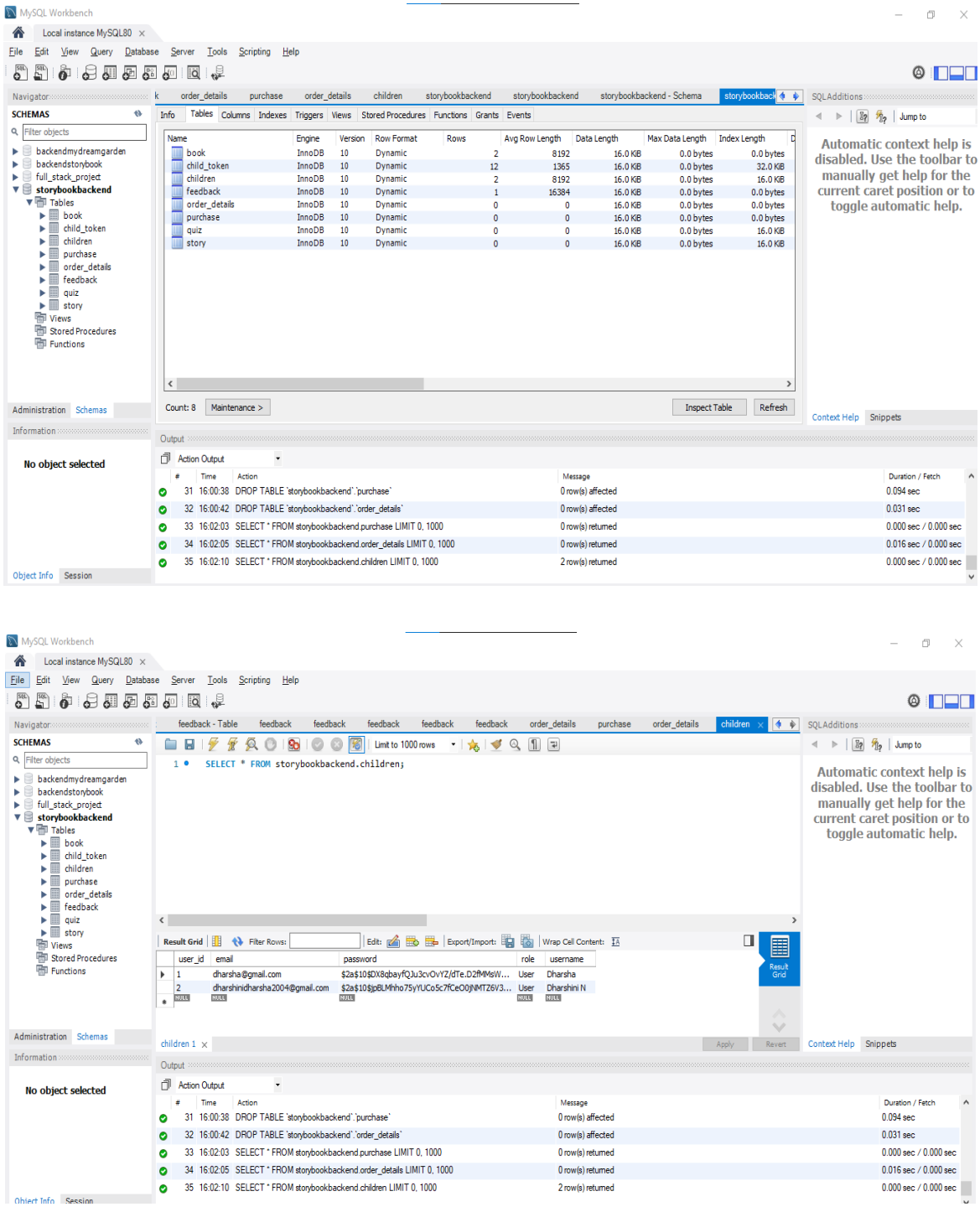


Fig 5.4 DATABASE

5.5 PAYMENT PAGE

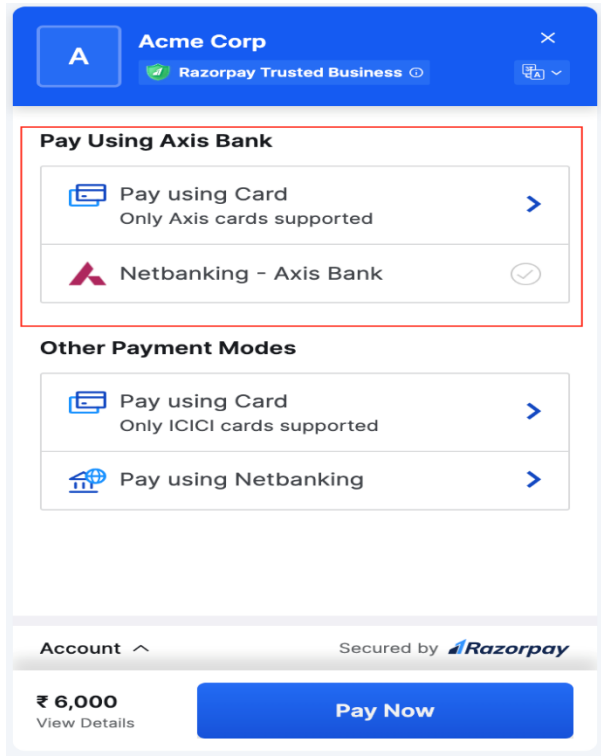


Fig 5.5 PAYMENT PAGE

5.6 CODING

Login:

```
import React, { useRef, useState } from 'react';
import { Box, TextField, InputAdornment, Button, Avatar, Typography } from
'@mui/material';
import AccountCircle from '@mui/icons-material/AccountCircle';
import PasswordIcon from '@mui/icons-material/Password';
import LockRoundedIcon from '@mui/icons-material/LockRounded';
import { useNavigate } from 'react-router-dom';
import { useDispatch } from 'react-redux';
import axios from 'axios';
import { login } from '../feature/user/UserSlice';
```

```
const linearGradient = 'linear-gradient(to right, #f569a3, #f79ed1)';
export default function Login() {
  // Data for backend
  const [formData, setFormData] = useState({
    email: '',
    password: '',
  });

  const emailRef = useRef(null);
  const passwordRef = useRef(null);
  const [error, setError] = useState({ email: false, password: false });
  const dispatch = useDispatch();
  const navigate = useNavigate();

  const handleChange = (event) => {
    const { name, value } = event.target;
    setFormData({ ...formData, [name]: value });
  };

  const handleSubmit = async (event) => {
    event.preventDefault();
    const email = formData.email;
    const password = formData.password;

    try {
      const response = await axios.post(
        'http://localhost:8080/api/auth/login',
        formData
      );
      console.log(response.data);
      const { accessToken, role,userId } = response.data;
      localStorage.setItem('token', accessToken);
```

```
    localStorage.setItem('role', role);
    localStorage.setItem('userId', userId);
    // localStorage.setItem('username', username);

    console.log('Token:', localStorage.getItem('token'));
    // alert('Login Success.!');
    if (role === 'ADMIN') {
      navigate('/admin');
    } else {
      navigate('/home');
    }
  } catch (error) {
    console.error(error);
    alert('Invalid Credentials.!');
  }

  if (email && password) {
    setError({ email: false, password: false });
    // dispatch(login(emailRef.current.value));
  } else {
    if (!email) setError((prev) => ({ ...prev, email: true }));
    if (!password) setError((prev) => ({ ...prev, password: true }));
  }
};

return (
  <form onSubmit={handleSubmit}>
    <Box
      display="flex"
      flexDirection="column"
      maxWidth={600}
      minWidth={400}
```

```
  alignItems="center"
  justifyContent="center"
  margin="auto"
  marginTop={5}
  padding={3}
  borderRadius={5}
  boxShadow="5px 5px 10px #ccc"
  sx={{
    ':hover': {
      boxShadow: '10px 10px 20px #ccc',
    },
    backgroundImage: linearGradient,
    alignItems: 'center',
    color: 'black',
  }}
>
  <Avatar id="avatar">
    <LockRoundedIcon />
  </Avatar>
  <Typography variant="h4" padding={3} textAlign="center">
    Login
  </Typography>
  <Box>
    <TextField
      id="input-with-icon-textfield"
      label="Email"
      name="email"
      inputRef={emailRef}
      value={formData.email}
      onChange={handleChange}
      variant="outlined"
      margin="normal"
```

```
    InputProps={{
      startAdornment: (
        <InputAdornment position="start">
          <AccountCircle />
        </InputAdornment>
      ),
    }}
    error={error.email}
    helperText={error.email ? 'Fill the valid email' : ''}
  />
</Box>
<Box>
  <TextField
    id="password-with-icon-textfield"
    label="Password"
    type="password"
    name="password"
    inputRef={passwordRef}
    value={formData.password}
    onChange={handleChange}
    variant="outlined"
    margin="normal"
    fullWidth
    InputProps={{
      startAdornment: (
        <InputAdornment position="start">
          <PasswordIcon />
        </InputAdornment>
      ),
    }}
    error={error.password}
    helperText={error.password ? 'Fill the password' : ''}
```

```
          />
        </Box>
        <Button
          sx={{ marginTop: 3, borderRadius: 3, backgroundColor: '#d6067c', ':hover': {
backgroundColor: '#ed5192' } }}
          variant="contained"
          type="submit"
        >
          Submit
        </Button>
        <Typography variant="body1" component="span" style={{ marginTop: '10px'
}}>
          Not registered yet?{' '}
          <span style={{ color: '#d6067c', cursor: 'pointer' }} onClick={() =>
navigate('/register')}>
            Register
          </span>
        </Typography>
      </Box>
    </form>
  );
}
```

Home page:

```
import React from 'react'
import homegif from "../assets/homegif.gif";
import { Box, Grid, Typography } from '@mui/material';
import 'bootstrap/dist/css/bootstrap.min.css';
import Carousalcomp from '../components/Carouselcomp';
import Footer from '../components/Footer';
import { useNavigate } from 'react-router-dom';
```

```
function Home() {
  const navigate=useNavigate();
  return (
    <>
    <div
    >
    <Typography variant='h3'
    marginTop="80px"
       sx={maintext}>
    Explore our curated collection of new and popular books to find your
    next literary adventure.
    </Typography>
    </div>
    <img src={homegif} alt="gifimage" ></img>
    <Typography
     variant="h3"
     sx={
      maintext
     }
    >
     Explore the Categories!
    </Typography>
    <Box
     sx={{ flexGrow: 1 }}>
     <Grid container spacing={5}
     sx={{ justifyContent: 'center',
        margin: "0 auto",
        width:"100%"
      }}
     >
       <Grid item xs={6} sm={3}>
         <img src="https://www.shutterstock.com/image-vector/reading-interesting-
```

```
book-concept-immersion-600nw-2296479725.jpg" alt="Picture Books"
          style={{ width: '100%',
            height: '200px',
            objectFit: 'cover',
            }}
            onClick={() => {
               navigate("/picturebook");
             }}></img>
            <h4>Picture Books</h4>
        </Grid>
      </Grid>
    </Box>
    <Typography
      variant="h3"
      sx={
       maintext
      }
    >
      Book Showcase!
    </Typography>
    <Box >
      <Carousalcomp/>
    </Box>

    <Footer/>
    </>
  )
}

export default Home
```

List Of Books:

```
// src/components/PictureBooks.jsx
import React, { useEffect, useState } from 'react';
import BookCard from '../../../components/BookCard';
import PictureItem from "./PictureItem";
import { Container, Grid, Typography } from '@mui/material';
import axios from 'axios';

const maintext={
    textAlign: "center",
    color: "#FF5722", // Bright color
    fontSize: 40,
    fontFamily: "'Comic Sans MS', cursive, sans-serif", // Playful font
    fontWeight: 700,
    padding: "20px 20px",
    background: "linear-gradient(90deg, rgba(255,215,0,1) 0%, rgba(255,0,150,1) 100%)"
}
function PictureBooks() {
    // const books = PictureItem;
    const [books, setBook] = useState([]);
  useEffect(() => {
    const fetchBook = async () => {
      try {
        const token = localStorage.getItem("token");
        if (!token) {
          console.error("Token not found in localStorage");
          return;
        }

        const response = await axios.get(
          "http://localhost:8080/api/books/get",
          {
```

```
          headers: {
            Authorization: `Bearer ${token}`,
          },
        }
      );
      setBook(response.data);
    } catch (error) {
      console.error(error);
    }
  };
  fetchBook();
}, []);

  return (
    <Container>
      <Typography variant="h3" sx={{ textAlign: 'center', my: 4 }} style={maintext}>
        Explore Our Collection of Picture Books!
      </Typography>
      <Grid container spacing={4}>
        {books.map(book => (
          <Grid item xs={12} sm={6} md={4} key={book.bookId}>
            <BookCard book={book} />
          </Grid>
        ))}
      </Grid>
    </Container>
  );
}

export default PictureBooks;
```

CHAPTER 6

CONCLUSION

This chapter tells about the conclusion that anyone can drive from the project and the learning we learnt by taking over this project.

6.1 CONCLUSION

In conclusion, the proposed interactive children's storybook and education app is designed to benefit young readers, parents, and educators by combining entertainment with learning. This app is scalable to accommodate a wide range of books and educational content, making it suitable for children of various age groups and learning levels. It aims to enhance the reading experience through features like read-aloud options, interactive quizzes, and the ability to purchase books directly within the app. Additionally, the app fosters a love for reading while promoting cognitive development through interactive content. With its user-friendly interface and engaging functionalities, this app empowers children to explore stories independently or with guidance, making learning a fun and rewarding experience for both children and parents alike.

6.2 FUTURE SCOPE

Integration of AI and Machine Learning::

Incorporating AI algorithms can personalize reading recommendations for children based on their reading history and learning progress. AI-driven features could also provide real-time pronunciation corrections during read-aloud sessions, enhancing the learning experience.

Enhanced Interactivity:

Future updates could introduce more advanced interactive features, such as gamified learning experiences, voice recognition for interactive quizzes, and augmented reality

(AR) elements that bring storybook characters to life, making reading even more engaging for young users.

Multilingual Support:

Expanding the app to include multilingual support would allow children to access stories and educational content in various languages, promoting language learning and cultural awareness from an early age.

Content Expansion:

Partnering with publishers and educational content creators to continuously expand the library with new storybooks, educational materials, and interactive quizzes tailored to different age groups and learning levels.

Parental Controls and Progress Tracking:

Introducing more robust parental control features and detailed progress tracking tools would allow parents to monitor their child's reading habits, quiz performance, and overall educational development, fostering a more supportive learning environment.

Mobile and Offline Access:

Developing a mobile version of the app and enabling offline access to storybooks and educational content would provide greater accessibility, allowing children to continue their learning journey anytime, anywhere.

Collaborations with Educational Institutions:

Partnering with schools and educational institutions to integrate the app into classroom learning, offering a blended learning experience that complements traditional education with digital resources.